Corporate Governance Reforms Around the World: The Effect on Corporate Social Responsibility

Abstract

This study examines the effect of major corporate governance reforms on corporate social responsibility (CSR) in countries around the world. Using a difference-in-differences design, we find robust evidence that worldwide corporate governance reforms result in an increase in CSR performance in both the environmental and social dimensions. Relative to countries with comply-or-explain reforms, countries with rule-based reforms tend to experience a greater increase in CSR performance post-reform. In addition, the effect of reforms on CSR performance is more pronounced for firms with higher levels of institutional ownership or lower levels of insider ownership and in countries with weaker CSR awareness and a more stringent legal and regulatory environment. Further analyses show that the reforms strengthen the relation between CSR and future financial performance. Collectively, our evidence suggests that increases in substantive CSR investment represent a potential channel through which corporate governance reforms can increase shareholder value and that the effectiveness of reforms varies with both firm- and country-level characteristics related to the relative influence of external shareholders.

Keywords*: corporate governance; corporate social responsibility; sustainability; insiders*

1. Introduction

A key objective of corporate governance reform is to overcome frictions preventing firms from investing in good corporate governance practices that can increase long-term shareholder value by improving board oversight and corporate transparency (e.g., Kim and Liu 2013; Fauver et al. 2017). As a result, during the last two decades, a number of countries have undertaken corporate governance reforms in an attempt to strengthen the mechanisms through which shareholders ensure a financial return on their investments (Shleifer and Vishny 1997). While approaches to reform vary among countries, most reforms focus on board-related practices, such as imposing greater board independence, promoting audit committee and auditor independence, and separating the positions of chairman and chief executive officer (CEO). Supporting the importance and effectiveness of such reforms, recent studies have documented that major corporate governance reforms implemented in many countries since the late 1990s increased shareholder wealth (e.g., Fauver et al. 2017).

Corporate performance in environmental and social dimensions (hereafter, corporate social responsibility [CSR] performance) is a critical issue globally and is at the forefront of corporate governance concerns for many firms.[1] Indeed, an increasing number of investors are integrating CSR into their investment decisions due to both financial and social considerations, thereby making investors a major driving force behind firms' CSR performance (Dyck et al. 2019). Following the stakeholder view that CSR represents an important tool for long-term shareholder value creation (e.g., Servaes and Tamayo 2013; Ferrell et al. 2016; El Ghoul et al. 2017; Lins et al. 2017), investors are likely to exert greater influence on improving CSR policies with the objective of enhancing long-term shareholder value due to strengthened governance practices following a country's corporate governance reform. Alternatively,

[1] See "*2019 Global & Regional Trends in Corporate Governance*," available at https://corpgov.law.harvard.edu/2018/12/30/2019-global-regional-trends-in-corporate-governance/.

although CSR has become an important business practice in recent years, opponents hold the view that it can be a manifestation of agency cost with the potential to hamper shareholder value (e.g., Friedman 1970; Bénabou and Tirole 2010; Krüger 2015; Cheng et al. 2016).[2] Based on this perspective, improved board oversights and monitoring resulted by strengthened corporate governance practices would presumably reduce firms' CSR investment resulting from agency problems. These discussions suggest that the ultimate effect of corporate governance reforms on CSR is an empirical question.

Given the presence of endogeneity concerns in examining the relation between corporate governance and CSR (Jamali et al. 2008; Harjoto and Jo 2011; Jo and Harjoto 2012; Ferrell et al. 2016), we take advantage of a quasi-experimental opportunity provided by the world wide adoption of corporate governance reforms to examine (1) whether and how major corporate governance reforms in a country affect firms' CSR performance and (2) whether and how the effect of reforms on firms' CSR performance varies with cross-sectional differences across reform-, firm-, and country-level characteristics. Examining the effect of corporate governance in a multi-country context also offers other advantages. For example, given that the effectiveness of corporate governance mechanisms likely varies with other country-level institutions (La Porta et al. 1988), an international study can shed light on how corporate governance interacts with other formal institutions in influencing managerial behavior.

To test whether reforms affect firms' CSR performance, we use data from Thomson Reuters ASSET4 to construct firm-level CSR performance measures. Based on a large sample of more than 20,000 observations from 34 countries during the 2002 to 2011 period with firms' CSR performance data available, we examine changes in firms' CSR performance following a country's implementation of major corporate governance reforms. Using a difference-in-

[2] See, for example, Kitzmueller and Shumshack (2012) and Radhakrishnan et al. (2018) for a review of the CSR literature.

indifferences (DID) research design allows us to make a stronger inference about the causal relationship between corporate governance and CSR performance. We find that on average, firms' CSR performance improves following reforms. Our results hold for different types of reforms (including reforms focusing on the improvement of board independence, enhancing audit committee and auditor independence, and encouraging the separation of the chairman and CEO roles) and across different dimensions of CSR performance (either the environmental or social dimension).

In addition, we find that the positive effect of reforms on CSR is stronger in countries with rule-based reforms and in countries with lower levels of CSR awareness. Additional results suggest that reforms have a greater effect on CSR performance in countries with a more stringent legal and regulatory environment. Finally, consistent with the literature showing the importance of CSR performance to shareholder wealth (e.g., Dhaliwal et al. 2011; Lins et al. 2017; Dyck et al. 2019), we find that the effect of reforms on CSR performance is more pronounced for firms with higher levels of institutional ownership or lower levels of insider ownership.

While the above findings lend support to the argument that corporate governance reforms have a positive effect on firms' CSR performance, the findings do not speak to the question of whether the improved CSR performance post-reform enhances shareholder value. That is, managers' improvement in CSR performance could be a signal of agency problems (Masulis and Reza 2015; Cheng et al. 2016; Cronqvist and Yu 2017) or could come from the pressure of outside directors who pay more attention to corporate responsibility than economic performance (Ibrahim and Angelidis 1995; Post et al. 2011). Thus, we next explore whether and how reforms affect the relation between CSR performance and future financial performance. Our results indicate that relative to firms domiciled in countries without reforms implemented during the same period, firms domiciled in countries with reforms implemented

during our sample period tend to subsequently experience a strengthened relation between CSR performance and future financial performance. This finding is consistent with the view that increased CSR performance in period post the reforms is perceived as value-enhancing by shareholders.

We conduct several additional tests to ensure the robustness of our findings. For example, we require a firm to appear for at least one year in both the pre- and post-reform periods and use a constant sample to explore the effect of reforms on CSR performance. We use an alternative DID specification by benchmarking each of our treatment firms (i.e., firms domiciled in countries with reforms implemented during our sample period) with a control firm selected using the propensity score matching (PSM) methodology from countries without reforms implemented during the same period (or from the U.K. because the U.K. was the first country to implement corporate governance reforms among our sample countries) for better comparison. To reduce the concern that changes in correlated omitted variables may drive our results, we also include variables controlling for the strength of firm-level corporate governance and time trend. Our results are qualitatively similar in all of these additional tests.

Next, using a dynamic research design, we find a statistically significant effect of reforms on CSR as early as from the beginning of the second year post-reform and such effect tends to last thereafter. We further assess the validity of the parallel trend assumption underlying the DID method by conducting a placebo test using different pseudo reform years during both the pre- and post-reform periods. We find no evidence of changes in CSR performance subsequent to pseudo reform years. Finally, we examine whether and to what extent the implementation of corporate governance reform affects firms' CSR reporting practices measured by the likelihood of (1) issuing a standalone CSR report, (2) preparing a CSR report in accordance with the Global Reporting Initiative (GRI) guidelines, (3) providing external assurance to signal the accuracy, completeness, and reliability of the CSR disclosure, and (4) integrating

CSR information on financial reports. However, in all of these tests, we *do not* find evidence suggesting that relative to managers in countries without reforms, managers in countries with reforms alter their CSR reporting practices during the post-reform period.

Taken together, our findings support the positive role played by a country's implementation of corporate governance reforms in fostering firms' substantive CSR performance. The finding of a stronger positive association between CSR performance and firms' future financial performance in the post-reform period lends further support to the value-enhancing view of CSR activities (Boubakri et al. 2016; El Ghoul et al. 2017). To sum up, our evidence suggests that the strengthened corporate governance practices with the goal of enhancing shareholders' value create a positive externality effect on the performance towards stakeholders. Moreover, the increases in substantive CSR investment represent a potential channel through which corporate governance reforms can increase shareholder value as documented by prior studies.

Our study contributes to the literature in several ways. First, the literature documents that nation-level institutional factors (such as culture and investor protection) have significant effects on shaping firms' CSR practices as well as their perceived value to investors (van der Laan Smith et al. 2005, 2010; Orij 2010; Ioannou and Serafeim 2012; Boubakri et al. 2016; Cahan et al. 2016; El Ghoul et al. 2017). For example, Ioannou and Serafeim (2012) find that firms' CSR performance is significantly related to the country's political system, educational system, and cultural system. Other studies find that countries characterized by a stakeholder orientation promote higher CSR engagement (van der Laan Smith et al. 2005; Orij 2010; Cahan et al. 2016). This paper documents that country-level corporate governance reforms not only play an important role in determining firms' CSR performance, but also on the effect of CSR performance on firm value. Thus, we add to the literature examining the cross-country

differences in CSR initiatives and contribute to the general literature studying determinants and consequences of CSR performance.

Second, the literature investigating the role of governance in influencing socially responsible firm behavior has thus far produced contradictory results (Coffey and Fryxell 1991; Waddock and Graves 1997; David et al. 2007; Jo and Harjoto 2012). A possible reason for that is the challenge of addressing the endogeneity between corporate governance practices and CSR practices. Given that a government's adoption of corporate governance reform is likely exogenous to firms' governance practices and can thus help mitigate the endogeneity concern commonly associated with such studies, our study uses the implementation of reform in a country as a quasi-natural experiment to draw a more direct causal inference on the effect of corporate governance on CSR performance.

Finally, our study contributes to a growing body of literature that examines the consequences of corporate governance reform in a global setting. For example, Fauver et al. (2017) find that board reforms increase firm value, and Kim and Lu (2013) find that corporate governance reforms reduce the investor protection gap between acquirers and targets, which in turn influences foreign acquirers' tendency to pick better performing firms in emerging markets. Tsang et al. (2019a) argue that a greater proportion of independent board members resulting from the implementation of corporate governance reforms may increase CEOs' career concerns and place excessive pressure on managers' short-term performance, reducing their incentives to pursue innovative projects with long-term value. Supporting this argument, they present evidence showing that the worldwide adoption of corporate governance reforms hinders firms' future innovative outputs. Adding to this literature, our findings suggest that corporate governance reforms can improve firms' CSR investment with the potential to create long-term shareholder value.

The remainder of this paper is organized as follows. Section 2 discusses related literature and develops research hypotheses. Section 3 describes the research methodology. Data and sample statistics are summarized in Section 4. Section 5 presents the main empirical results and results of other robustness checks. Section 6 discusses additional analyses. Section 7 concludes the paper.

2. Related Literature and Hypotheses Development

The literature suggests that corporate governance reforms affect management oversight and firm performance (Dahya et al. 2002; Dahya and McConnell 2007; Zhang 2007; Li 2014). While findings based on a single country are inconclusive regarding the valuation consequences of firm-level governance attributes (Hermalin and Weisbach 2003), international studies tend to show a positive relation between governance quality and firm performance (e.g., Aggarwal et al. 2009; Dahya et al. 2008). Further supporting the effectiveness of corporate governance reforms in affecting firm performance, Fauver et al. (2017) document that major board reforms implemented in countries around the world increase firm value.

The literature outlines two perspectives on CSR. The positive view of CSR posits that companies engage with stakeholders to enhance shareholder value. In line with this view, studies show that superior CSR performance is associated with greater access to external finance (e.g., Goss and Roberts 2011; Dhaliwal et al. 2011; Cheng et al. 2014), reduced cost of capital, and higher valuation (e.g., Galema et al. 2008; El Ghoul et al. 2011; Ng and Rezaee 2015). Further supporting this view, the literature also provides examples of the mechanisms through which CSR performance can have a positive effect on shareholder wealth, such as customer satisfaction, employee satisfaction, and greater institutional ownership (e.g., Dowell et al. 2000; Luo and Bhattacharya 2006; Edmans 2011; Servaes and Tamayo 2013; Dimson et al. 2015). More recently, Lins et al. (2017) suggest that a firm's CSR activities can be

considered a vehicle for building social capital, thereby protecting firm value during a period of financial crisis.

The negative view of CSR, in contrast, holds that CSR signals the presence of agency problems in a firm (Friedman 1970). According to this line of thought, insiders (e.g., managers or controlling shareholders) invest in CSR activities for their own benefit, such as to enhance their reputation among key stakeholders at the expense of shareholders (e.g., Cespa and Cestone 2007; Prior et al. 2008; Barnea and Rubin 2010; Bénabou and Tirole 2010; Masulis and Reza 2015). Empirical studies provide evidence supporting this alternative view of CSR. For example, using an event study, Krüger (2015) shows that investors respond negatively to positive CSR news subject to a high agency problem concern. Ioannou and Serafeim (2015) explore the effect of CSR from analysts' perspectives and find that analysts issue more pessimistic recommendations for firms with high CSR ratings when they perceive firms' CSR as an agency cost.

Additionally, CSR is considered an expensive investment that can incur substantial costs in the near-term with uncertain financial returns in the long run (e.g., Manchiraju and Rajgopal 2017; Chen et al. 2018). Although an extensive body of literature has studied the link between CSR and firm value, the ongoing debate and inconclusive evidence suggest that firms' CSR investments are likely associated with uncertain future returns and thus can be perceived as a form of risk-taking.[3] This view is further supported by the fact that firms' CSR activities tend to be broad in scope (e.g., covering multiple dimensions including environment, products, employees, communities, etc.), different in form (e.g., proactive or reactive), and forward-looking in nature. As a result, relative to other forms of investment, such as capital expenditures,

[3] The literature provides mixed evidence concerning the effect of CSR on financial performance (e.g., Barnett and Salomon 2006; McWilliams and Siegel 2000; Orlitzky et al. 2003). Further, Friede et al. (2015) analyze around 2,200 studies and conclude that there is mixed evidence on the effect of CSR on financial performance.

the financial returns of CSR tend to be more difficult to quantify as its outcomes may be more diffuse and uncertain (Wang et al. 2016).

Corporate governance reforms implemented in a country are typically followed by higher corporate governance requirements, which presumably help align corporate insiders' interests with those of shareholders.[4] In this study, we posit that corporate governance reforms may affect CSR through various mechanisms, which can lead to contrasting expectations. The positive view of CSR suggests that corporate governance reforms should encourage firms' CSR investment to enhance shareholder value. Consistent with this prediction, research shows that well-governed firms that suffer less from agency problems engage more in CSR (Harjoto and Jo 2011; Jo and Harjoto 2012; Ferrell et al. 2016). In addition, to the extent that corporate governance reforms strengthen the influence of outside board members who tend to view firms' broader societal effect (even without the potential to enhance shareholder value) as more important (Ibrahim and Angelidis 1995; Post et al. 2011), we again predict that reforms may have a positive effect on CSR performance.

There is an alternative prediction leading to a negative relationship between corporate governance reforms and CSR performance. As discussed above, the negative view of CSR argues that CSR activities represent the outcome of agency problems in the firm. If reforms constrain managers' flexibility through a greater level of board oversight that prevents managers from investing in CSR activities for personal benefit, one would expect firms to have a lower level of CSR performance after the implementation of reforms. In addition, studies suggest that stricter corporate governance reforms could reduce managers' risk-taking incentive following the reforms (e.g., Bargeron et al. 2010; Cohen and Dey 2013; Tsang et al.

[4] Studies suggest that managers tend to be risk-averse and are less willing to invest in long-term value-maximizing projects. However, better governance can provide incentives and mechanisms that encourage managers to take risks and invest in projects that benefit shareholders in the long run (e.g., Jensen and Meckling 1976; Koirala et al. 2018).

2019a). Thus, to the extent that reforms improve monitoring of corporate insiders by shareholders and expand the liability associated with risk-taking activities,[5] managers might be less likely to invest in CSR initiatives, resulting in lower CSR performance post-reform.

Based on the discussions above, we formulate competing hypotheses as follows:

H1a: *Corporate governance reforms have a* ***positive*** *effect on firms' CSR performance.*

H1b: *Corporate governance reforms have a* ***negative*** *effect on firms' CSR performance.*

3. Research Design

To test the effect of corporate governance reforms on firms' CSR performance, we use a DID design by regressing firms' CSR performance on *Post*, an indicator variable that captures the post-reform period in which corporate governance reform was adopted by a country. Because each country implements reform in different years, following previous studies (e.g., Fauver et al. 2017; Tsang et al. 2019a), we use a staggered DID research design that involves multiple treatment groups and time periods. Accordingly, we include both firm fixed effects and year fixed effects to identify the within-firm and within-year changes in CSR performance between treatment and control firms when countries initiate reforms. This approach implicitly takes as the benchmark group all firms from countries without reforms as of a particular time and is commonly used in the literature (Bertrand and Mullainathan 2003; Bertrand et al. 2004).[6]

To test our hypotheses, we estimate the following regression model:

$$CSR\_Perf = \beta_0 + \beta_1 Post + \beta_2 Size + \beta_3 Age + \beta_4 RD + \beta_5 Leverage + \beta_6 Accrual + \beta_7 Competition + \beta_8 SalesGrowth + \beta_9 Capital + \beta_{10} MB + \beta_{11} Institution + \beta_{12} Nmarket + \beta_{13} Analyst + \beta_{14} Big4Auditor + FirmFE + IndustryFE + YearFE + \mathcal{E} \quad (1)$$

[5] Given the expensive nature and uncertain future return associated with CSR activities, CSR investment can be considered as a risk-taking activity.

[6] As a robustness test, we also use an alternative DID specification. We discuss this research design and the corresponding results in Section 4.

in which *CSR_Perf* denotes CSR performance, which consists of environmental and social performance. We follow previous studies (e.g., Ioannou and Serafeim 2012; El Ghoul et al. 2016) and measure a firm's CSR performance using the average scores of all performance indicators in the environment (*ENV_Perf*) and social performance pillars (*SOC_Perf*). The value of *CSR_Perf* ranges from 0 to 1, with a higher value indicating better CSR performance. The main variable of interest is *Post*, which is an indicator variable that equals one if a given year is the year in which a country's reform became effective or any following year and zero otherwise. Theoretically, this variable captures the incremental change (from pre- to post-reform period) in the CSR performance of firms domiciled in countries ***with*** reforms implemented relative to the change in CSR performance of firms located in countries ***without*** reforms implemented during the same period. Hypothesis 1a (1b) predicts that the implementation of corporate governance reforms has a positive (negative) effect on firms' CSR performance. Therefore, a significantly positive (negative) coefficient on *Post* (β_1) indicates that Hypothesis 1a (1b) is supported.

We include an array of control variables documented in the literature as potential determinants of CSR performance. Larger firms and firms with an established history have more resources to invest in CSR (McGuire et al. 1988; McWilliams and Siegel 2000). Thus, we control for firm size (*Size*, measured as the natural logarithm of total assets) and *Age* (measured by the natural logarithm of the number of years since incorporation). *RD* is research and development expenses scaled by net sales. *Leverage* is the ratio of total debt to total assets, a proxy for lenders' concerns about a firm's risk and CSR performance (Goss and Roberts 2011). Jiraporn et al. (2014) argue that firms with more capital expenditures have fewer resources to invest in CSR. Therefore, we control for capital intensity, measured by *Capital* (the ratio of capital expenditures to total assets). We control for growth opportunities (measured by *MB*, the market-to-book ratio of equity, and *SalesGrowth*, the annual sales growth rate) as

firms with higher growth opportunities may have fewer resources for CSR activities but may also have greater incentives to use CSR to reduce information asymmetry (Dhaliwal et al. 2011). *Competition* is measured by the Herfindahl–Hirschman Index, computed by (-1) times the sum of squared market shares in the sales of a firm's industry, with industries being defined based on the two-digit SIC code. We include two measures of financial reporting quality, *Accrual* and *Big4Auditor*, as firms with less transparent reporting can use CSR as a tool to cover up earnings management misconduct (Chih et al. 2008; Prior et al. 2008). *Accrual* is a measure of firm-level financial opacity measured by country-industry-year-adjusted total accruals based on Bhattacharya et al. (2003). *Big4Auditor* is an indicator variable equal to one if a firm's auditor is a big four auditor and zero otherwise. Cross-listing (measured by *Nmarket*, the total number of stock exchanges on which a firm is listed, including its home country listing), analyst coverage (measured by *Analyst*, the number of analysts following a firm during the current year), and institutional ownership (measured by *Institution*, the proportion of shares held by all types of institutional investors at the end of the year) are also shown to be associated with CSR performance (Boubakri et al. 2016; Dhaliwal et al. 2011). Finally, we include the industry, year, and firm fixed effects to account for variation in CSR performance that is potentially driven by unobserved heterogeneities across industry, year, and firm, respectively.[7]

4. Sample Selection and Descriptive Statistics

4.1. Data source and sample selection

We first identify countries that have experienced major corporate governance reforms based on Fauver et al. (2017) and Kim and Lu (2013).[8] For each reform initiative, we obtain information about the year in which a reform became effective, the types/objectives of the

[7] Our inferences are unchanged if, in our regressions, we cluster standard errors either by industry or by firm.
[8] Fauver et al. (2017) and Kim and Lu (2013) manually collect information on corporate governance reforms around the world from various sources, such as the World Bank, the European Corporate Governance Institute, local stock exchange regulators, and research studies.

reform involved (e.g., encouraging board independence, promoting audit committee and auditor independence, and separating the chairman and CEO positions), and the reform approach (rule-based or comply-or-explain). Detailed information about the implementation year, types, and approach of major reforms in each country is provided in Appendix A.

Our sample period starts with 2002, the earliest year for which we can obtain CSR performance data from Thomson Reuters ASSET4 ESG database. The advantage of the ASSET4 database is that it has a large number of international firms and it scores firms on financial, environmental, social, and governance dimensions based on objective, publicly available information according to Thomson Reuters (e.g., stock exchange filings, annual financial and sustainability reports, nongovernmental organizations' websites, and news sources). The database evaluates firms' environmental performance in terms of three dimensions: (1) emissions reduction, (2) resource reduction, and (3) product innovation. In terms of social performance, it evaluates seven dimensions: (1) employment quality, (2) health and safety, (3) training and development, (4) diversity and opportunity, (5) human rights, (6) community, and (7) product responsibility. We focus on firm performance in the environmental and social dimensions and use the average performance score of both dimensions as a measure of CSR performance. Appendix C summarizes the detailed components in the environmental and social dimensions defined by ASSET4.

In our sample, all 34 countries with corporate governance reforms implemented since 1998 are covered by ASSET4. However, because ASSET4 started to provide CSR performance data for a large number of global firms in 2002, to ensure the existence of at least a one-year pre-reform window to examine the changes in firms' CSR performance, the reform year of our treatment countries starts with 2003 (three countries, France, Singapore, and the U.S., implemented reforms in 2003). Our sample period ends in 2011 because all of the countries in our sample completed their reforms by 2007. Using 2011 as the ending year ensures a sufficient

post-reform period to conduct the analysis. We further exclude firms from financial industries (SIC codes 6000-6411).[9] Lastly, we exclude firm-year observations with missing data for the control variables, leading to a final sample of 20,293 firm-year observations associated with 3,514 firms from 34 countries (12,343 observations from countries with reforms implemented since 2003 and 7,950 observations from countries with reforms implemented before 2003). Among the 34 sample countries, 15 countries with major corporate governance reforms implemented during our sample period are our treatment samples (in which 5 countries adopted rule-based reforms). For more detailed information about our treatment countries, please see Figure 1.

4.2. Sample distribution and descriptive statistics

Panel A of Table 1 presents the sample distribution and average CSR performance by country. The treatment group represents countries that initiated corporate governance reforms during our sample period. As discussed earlier, countries that implemented reforms in year 2002 or before do not experience any reform changes during our sample period. Thus, these countries are the benchmark group. Both the treatment and benchmark groups exhibit a large variation in the number of firm-year observations across countries, with the U.S. accounting for the largest (52 percent of the full sample) among the treatment group and Japan accounting for the largest (36 percent of full sample) among the benchmark group.

Panel B of Table 1 reports the sample distribution and average CSR performance (*CSR_Perf*) by year. There is an increasing trend in the number of firms included in the sample, from 784 firms (3.9 percent) in 2002 to 3,176 firms (15.7 percent) in 2011. The relatively smaller number of firms included in our sample in years before 2004 is mainly due to the

[9] In our robustness test, we further remove all utility firms (SIC codes 4900-4999) and find our inferences unchanged. Previous studies (e.g., Fauver et al. 2017) also exclude firms with negative sales, negative book value of equity, and total assets less than USD$10 million to improve the comparability of firms across countries. We do not impose such requirements in our study given our relatively smaller sample size due to the requirement of CSR performance variables from ASSET4. However, we do not find our inferences to be affected even if we do impose these additional sample restrictions.

change in the ASSET4 company universe. According to ASSET4, its historical ESG data during the earlier period of the database covers approximately 1,000 firms (i.e., Russell 1000 Index firms), mostly U.S. and European companies.

The increased sample size also justifies the need for a constant sample analysis when conducting empirical tests using panel data. As a result, in Table 1, Panel A, we also present comparative statistics of firms' CSR performance across countries for a constant sample in which we require a firm to appear at least once in both the pre- and post-reform periods. Our results indicate that for treatment countries, on average, firms' CSR performance improves from 0.487 to 0.600 (difference = 0.113, t-value = 13.381). In comparison, for benchmark countries, firms' CSR performance is on average 0.721 in the post-reform period relative to an average of 0.654 in the pre-reform period (difference = 0.068, t-value = 5.837). Thus, the results from the univariate analysis across treatment and benchmark countries provide preliminary support for a positive effect of corporate governance reforms on firms' CSR performance.

In Panel B of Table 1, we also observe a gradual improvement in CSR scores during the sample period, consistent with the increasing effort that firms devote to their CSR performance over time. Panel C of Table 1 reports the sample distribution and average CSR performance by industry based on the 22 industry classifications of Barth et al. (1998). Firms in the chemicals industry (#4) and manufacturing industries (#7 Rubber/Glass and #11 Transport Equipment) appear to have the highest CSR performance, followed by firms in the utilities industry (#16), which is consistent with the importance of CSR activities in these industries. In contrast, firms in the insurance (#20) and services (#21) industries tend to have a lower level of CSR performance.

[Table 1 Here]

Panel A of Table 2 provides descriptive statistics of key variables used in the main analyses. To reduce the influence of outliers, all continuous variables are winsorized at the top

and bottom one percentile. The average CSR performance score is around 0.5, comparable with those of prior studies that also measure firms' CSR performance using data from ASSET4 (e.g., Ioannou and Serafeim 2012; Lys et al. 2015; El Ghoul et al. 2017; Tsang et al. 2019b).

[Table 2 Here]

Next, we conduct bivariate analysis by obtaining the Pearson correlation coefficients of the major variables used in our test. Untabulated results indicate that our variable of interest, the post-reform indicator *Post*, is positively and significantly correlated with the three measures of CSR performance, *CSR_Perf* (0.024), *ENV_Perf* (0.030), and *SOC_Perf* (0.014). This provides preliminary evidence supporting H1a that firms' CSR performance improves following corporate governance reforms. The results also show that CSR performance is positively correlated with firm size, firm age, R&D expenditures, leverage, capital intensity, institutional ownership, cross-listing, analyst coverage, and big four auditor. These findings are generally consistent with the literature.

5. Regression Results

5.1. Baseline results

Table 3 reports the regression results of testing the competing hypotheses regarding the effect of corporate governance reforms on CSR performance. Column (1) shows that the coefficient on *Post* is positive and statistically significant (coefficient = 0.021, $p < 0.01$) when overall CSR performance (*CSR_Perf*) is the dependent variable. Columns (2) and (3) present the results when the dependent variable is separately measured by environmental performance (*ENV_Perf*) and social performance (*SOC_Perf*). Again, the coefficients on *Post* are both positive and significant ($p < 0.01$). Thus, results in Table 3 support Hypothesis 1a that a country's implementation of corporate governance reforms improves, on average, firms' CSR

performance. The coefficients of the control variables are generally consistent with those reported in the literature (e.g., Dhaliwal et al. 2011; Lys et al. 2015).

For robustness, we also measure CSR performance for each category of the environmental and social dimensions individually (as described in Appendix C) and find generally consistent results. Specifically, our tests indicate significantly positive estimated coefficients for eight CSR categories (including #1. resource reduction; #2. emissions reduction; #4. employment quality; #5. health and safety; #6. training and development; #7. diversity and opportunities; #9. Community; and #10. product responsibility and) and show insignificant results for the remaining two CSR categories (#3. product innovation; and #8. human rights). Results from the univariate analysis for CSR performance across each of the ten CSR categories are generally consistent with the findings from multivariate regression analyses.

[Table 3 Here]

5.2. Alternative DID specification

Our baseline results are based on a staggered DID research design. While a key advantage of this design is that it automatically treats all firms from countries without reforms as of a particular time as the benchmark group when evaluating the effect of reforms on firms from the treatment group, the various benchmark groups implicitly selected by the model in different years provide a less clear picture of the composition of the benchmark sample. To examine whether our findings are robust across different model specifications, we use an alternative DID design by using one of the following two benchmark groups: (1) the U.K., the first country to implement corporate governance reforms after 1998, and (2) all countries with reforms implemented outside of the testing period including the U.K. (referred to as non-reformed countries). In this specification, we create an indicator variable, *Reform*, which equals one for the treatment firms and zero for the benchmark firms. For the benchmark group (either the U.K.

or all non-reformed countries), we assign year 2004 as the pseudo reform year for the definition of *Post*.[10]

Column (1) of Table 4 uses all firms in non-reformed countries as benchmark firms. We find that the coefficient on the interaction *Reform* × *Post* is positive (coefficient = 0.028) and significant ($p < 0.01$). We find similar results in column (3), when we use only firms in the U.K. as benchmark firms. Next, we use the PSM approach to identify more comparable benchmark firms from non-reformed countries. Specifically, we first estimate a logit regression to model the probability of being a treatment firm using the control variables included in model (1). We then estimate a propensity score for each firm using the predicted probabilities from the logit model. After obtaining the score, we match each treatment firm to a control firm selected from the benchmark countries by using the nearest neighbor matching technique without replacement. Columns (2) and (4) of Table 4 report the multivariate regression results using propensity score matched firms from non-reformed countries and from the U.K. as the benchmark, respectively. In both columns, we find results supporting the prediction of a positive effect of corporate governance reform on firms' CSR performance.

[Table 4 Here]

5.3. Other robustness checks

We perform several other tests to ensure the robustness of our findings. First, in column (1) of Table 5, we present the multivariate regression results using the constant sample instead of the full sample. This approach ensures that we are comparing the same set of firms across two periods (i.e., the pre- and post-reform periods). The results show a positive and significant coefficient on *Post* (0.02, significant at $p < 0.01$). Column (2) compares the changes in CSR performance across two constant test windows (i.e., one year before and one year after reform).

[10] We choose 2004 as the pseudo reform year for the benchmark group because this is the year in which one can observe the largest number of countries implementing major corporate governance reforms during our sample period. In robustness tests, we also use different pseudo reform years (2005, 2006, or 2007) and find qualitatively similar results.

Albeit with a much smaller sample size due to a shorter window, this approach helps mitigate the potential concerns of possible confounding events likely observed during a longer window that may also drive a change in firms' CSR performance. The estimated coefficient on *Post* is still significantly positive (0.041, significant at $p < 0.01$). In column (3), we exclude all firms from the U.S. (i.e., the country with the highest number of observations in the treatment group) and find results consistent with our main inference (0.016, significant at $p < 0.05$).[11]

To further alleviate the concern of unequal sample sizes across countries, we use a weighted least squares (WLS) model with the number of firm-year observations per country as the weight in our estimation. The result reported in column (4) does not alter our inferences drawn from the previous table (0.087, significant at $p < 0.01$). Next, given the positive correlation between corporate governance and CSR performance documented in prior studies (Jamali et al. 2008; Harjoto and Jo 2011; Jo and Harjoto 2012; Ferrell et al. 2016), we include firms' corporate governance performance score (*CG_Perf*) obtained from ASSET4 as an additional control variable in testing model (1). Consistent results are reported in column (5).[12]

Finally, in developing our empirical proxy for CSR performance, we calculate the equally weighted average of firms' social and environmental scores from ASSET4. To ensure that our measure is not driven by industry-wide variations, we adjust the CSR performance scores by the industry-year mean value and use this industry-year mean adjusted measure, denoted *CSR_Perf_Adj*, as the dependent variable in the regression. The results presented in column (6) of Table 5 still show a significantly positive coefficient on *Post*. Furthermore, given that *CSR_Perf* measures observed CSR outcomes rather than CSR inputs/commitments, as an

[11] In additional robustness test (untabulated), instead of excluding all U.S. firms, we exclude all firms from Japan (i.e., the country with the highest number of observations in the benchmark group) and find our inference still holds.

[12] In addition, we add a time trend variable (*TIME*, which takes on the value of year *t* less 2002) into the regression as an additional control to allow for possible time trends in CSR performance. In untabulated results, we still find a positive and significant coefficient on the indicator *Post*. Thus, our inferences do not change after controlling for a possible time trend.

alternative CSR performance measure, we calculate a firm's CSR performance based on the firm's *ex ante* commitment to CSR initiatives. The *ex ante* commitment to CSR initiatives is captured by the average of the performance score of four CSR drivers (CSR Policy, CSR Implementation, CSR Monitoring, and CSR Improvement) provided by ASSET4. Results (untabulated) are qualitatively identical when we rerun our tests using this alternative measure of CSR performance.

[Table 5 Here]

5.4. Parallel trend assumption and Placebo test

The validity of the DID method depends crucially on the parallel trend assumption. That is, in assessing the possible change in CSR performance during the post-reform period, we assume that the trend in the outcome variables (i.e. CSR performance) for both the treatment and control groups during the pre-reform period is similar. To test the validity of this assumption, we plot the distribution of changes in CSR performance from year *t-2* to *t-1* before the reforms implemented in year *t* for both the treatment and control samples with available data in periods before the reforms. The plot shows that the distribution does appear to maintain a similar pattern for both samples in the pre-reform period.

To further assess the validity of the parallel trend assumption underlying the DID method, we conduct placebo tests using different pseudo reform years for countries without implemented reforms during our sample period. While we are not able to create a pseudo reform year earlier than 2002, the first year of our sample period, we are able to conduct placebo tests by using a random year after the implementation of corporate governance reforms and also by using the pre-reform years for treatment countries with reforms implemented after 2004. We find no evidence of changes in CSR performance subsequent to pseudo reform years. For brevity, results from the placebo tests are not tabulated.

5.5. Tests of the dynamic effect of corporate governance reforms

Our findings thus far suggest that the implementation of corporate governance reforms increases firms' CSR performance. In this section, we examine a dynamic treatment effect by decomposing the post-reform period into first year (*Post_1*), second year (*Post_2*), and third and all subsequent years (*Post_3 & Above*) after reforms. The results are presented in Table 6. Across all measures of CSR performance, we find that increases in CSR performance are evident from the second year after a country's implementation of reforms[13] and the positive effect of reforms on CSR performance appears to not be temporary but persists for a long horizon.

[Table 6 Here]

5.6. Year-by-year examination

In this section, we use a year-by-year DID specification on a constant sample to test the robustness of our findings. In our sample, major corporate governance reforms by countries are mostly distributed over 2003-2006.[14] As the U.K. implemented the earliest reform, we use it as the benchmark country in this test. We then assign a pseudo reform year to all firms in the benchmark country based on the actual reform year of the treatment countries. This specification allows us to test the changes in firms' CSR performance for the treatment firms, relative to the changes in CSR performance for the control firms, during the same pre- and post-reform year.[15] We repeat this test for each year, 2003-2006. We summarize our findings in Table 7. Panel A presents the results based on the full sample, and Panel B presents the results based on the PSM sample. The results clearly indicate that among the years with major

[13] We acknowledge the possibility that the finding of a significant increase in CSR performance starting from year *t+2* after the implementation of reforms can be partially driven by the possible delay of CSR rating agencies (such as ASSET4) in measuring firms' CSR performance.

[14] During 1998-2007, 6, 10, 3, 5, 3, and 3 countries implemented major corporate governance reforms in 2001, 2002, 2003, 2004, 2005, and 2006, respectively. The remaining four countries implemented their reforms in 1998 (the U.K.), 1999 (South Korea), 2000 (Israel), and 2007 (Indonesia).

[15] Our regression model is: $CSR\_Perf = \beta_0 + \beta_1 Post + \beta_2 Reform + \beta_3 Reform \times Post + \beta_k \sum Controls_{ijt} + YearFE + IndustryFE + CountryFE + \varepsilon_{ijt,}$, in which *Reform* is an indicator variable indicating treatment firms (i.e., firms in countries with major corporate governance reforms implemented in year t), and *Post* is an indicator variable indicating whether it is in the post-reform period.

corporate governance reforms, we observe increased CSR performance after the implementation of reforms (albeit statistically insignificant in 2004). We obtain a similar result when we replace the CSR performance measure with either environmental or social performance.

[Table 7 Here]

6. Cross-Sectional Tests and Additional Analyses

6.1. Different objectives/types of corporate governance reforms

Next, we examine whether corporate governance reforms with different objectives (i.e., promoting board independence, encouraging audit committee and auditor independence, and separating the chairman and CEO positions) affect CSR performance differently. The literature suggests that all of these corporate governance mechanisms are associated with higher levels of board monitoring.[16] Because countries differ in their objectives/types of corporate governance reforms, we repeat our analysis after restricting the sample to countries implementing each particular type of reform (See Appendix A for a list of countries with each type of corporate governance reform). The results are reported in Table 8. Overall, consistent with our previous findings, we continue to observe a positive relation between reforms and CSR performance across all types of board reforms.

[Table 8 Here]

6.2. Different approaches to corporate governance reform

We now examine whether the effect of corporate governance reforms on CSR performance varies across comply-or-explain or rule-based reforms. While both reform approaches are prevalent, there are conflicting views regarding which is better. Some argue

[16] For example, Weisbach (1988) finds that board independence increases monitoring effectiveness. Xie et al. (2003) find that a greater level of audit committee and auditor independence reduces earnings management. Similarly, Sarkar et al. (2008) show that CEO duality is associated with higher management window-dressing propensity, suggesting that separating the chairman and CEO positions can enhance corporate monitoring.

that the one-size-fits-all rule-based approach runs the risk of becoming overregulation, while others opine that the comply-or-explain approach might not yield the intended effect. To test the moderation effect of the reform approaches, we use an indicator variable, *Rule*, to identify countries with rule-based reform and interact this variable with *Post.*[17] Thus, the interaction term *Post* × *Rule* captures the difference (if any) in the effect of rule-based reforms relative to comply-or-explain-based reforms on CSR performance.

The results are presented in Table 9. The coefficient on the interaction term is positive and significant across three measures of CSR performance. These results suggest that the effect of corporate governance reforms on CSR performance is stronger when the reform takes the rule-based approach. Additional (untabulated) analysis also indicates that firms in rule-based reform countries tend to have weaker CSR performance prior to corporate governance reform, suggesting that reforms may have a greater effect in countries with a greater potential for CSR improvement.

[Table 9 Here]

6.3. The moderating effect of CSR awareness

The literature suggests that the effectiveness of corporate governance mechanisms could be conditional on country-level institutions. For instance, Dahya et al. (2008) find that board independence, a major element of corporate governance, is positively related to firm value in countries with poor investor protection but do not find a significant relation in countries with strong investor protection. Turning to CSR performance, prior studies suggest that the value of CSR initiatives is greater in stakeholder-oriented countries that place greater emphasis on CSR activities (Simnett et al. 2009; van der Laan Smith et al. 2010; Dhaliwal et al. 2012). Therefore, we expect to observe a stronger positive effect of corporate governance reforms on CSR

[17] In our test, *Rule* is not included as a main effect because it has no within-firm variation after we include firm fixed effects in the model.

performance when investors have a higher level of CSR awareness. However, in countries where the level of CSR awareness is high, it is also likely that further improvement of CSR performance is more costly given the high level of CSR performance in the pre-reform period.[18] This prediction suggests a weaker effect of reforms on CSR performance in countries with high levels of CSR awareness.

To examine whether and how country-level CSR awareness affects the relationship between corporate governance reforms and CSR performance, we interact *Post* with an indicator variable, *HI_Pubaware*, which captures the level of public awareness of CSR issues in individual countries (Dhaliwal et al. 2012).[19] Results reported in Table 10 show a negative and significant coefficient on the interaction term *Post* × *HI_Pubaware*. These findings support the conjecture that, relative to countries with lower levels of CSR awareness before reforms, countries with higher levels of CSR awareness tend to observe a weaker CSR performance after the implementation of corporate governance reforms.

[Table 10 Here]

6.4. The moderating effect of legal and regulatory environment

An effective corporate governance framework requires an effective legal and regulatory foundation (OECD 2006). Research suggests that the effect of regulatory changes (such as the adoption of International Financial Reporting Standards) depends crucially on the level and/or effectiveness of its enforcement (e.g., Christensen et al. 2013; Ponticelli and Alencar 2016). Consistent with this view, Brown et al. (2014) show that the effectiveness of accounting regulation is more pronounced in countries with stronger enforcement.

[18] Additional (untabulated) analysis indicates that firms domiciled in countries with higher level of CSR awareness indeed tend to have higher levels of CSR performance prior to corporate governance reform, suggesting that reforms may have a weaker effect in countries with greater levels of CSR awareness.

[19] *HI_Pubaware* is an indicator variable which equals to one (zero) if the mean rank score of (1) the number of non-government organizations per million population and (2) total number of CSR reports issued by non-commercial organizations divided by millions in population for each country is above (below) the sample median in the same year. The results are qualitatively similar when we use alternative stakeholder orientation measures from Dhaliwal et al. (2012).

In this section, we examine whether the positive association between reforms and CSR performance varies with the stringency of the legal and regulatory environment in a country. To examine the role of country-level legal environment in moderating the effect of corporate governance reforms on CSR performance, we use two variables to capture the stringency or development of a country's legal and regulatory environment and interact each of these variables with *Post*. The country-level stringency of legal environment is proxied by country-level (1) investor protection index, measuring the strength of investor protection, obtained from "Doing Business Indicators" by the International Finance Corporation and World Bank and (2) regulatory quality index, which captures perceptions of the ability of a government to formulate and implement sound policies and regulations that permit and promote private sector development, obtained from "Worldwide Governance Indicators" by the World Bank. To facilitate interpretation, in the empirical model we use an indicator variable, *HI_InvPro*, which equals one (zero) if the investor protection index is above (below) the sample median. Similarly, *HI_RegQual* is an indicator variable that equals one (zero) if the regulatory quality index is above (below) the sample median.

The results of this analysis are reported in Table 11. Column (1) shows a positive and significant coefficient on *Post* × *HI_InvPro*, suggesting that the effect of corporate governance reforms is stronger in countries with higher levels of investor protection. Consistently, we find a significantly positive coefficient on *Post* × *HI_RegQual* in column (2), which again supports the prediction that the positive effect of corporate governance reforms on CSR performance is more pronounced in countries with a more stringent regulatory environment.[20]

[Table 11 Here]

6.5. The moderating effect of ownership

[20] As an additional analysis, we include both *Post* × *HI_Pubaware* and *Post* × *HI_InvPro* (or alternatively *Post* × *HI_Pubaware* and *Post* × *HI_RegQual*) in the same model and find our inferences from both Table 10 and 11 unchanged.

Using an international setting, Dyck et al. (2019) present evidence that institutional ownership is positively associated with firms' CSR performance. They further show that the positive effect of institutional ownership on firms' CSR performance is motivated by both financial and social returns as perceived by institutional investors. Other studies suggest that firms with more concentrated insider ownership are likely to observe a greater level of conflict of interest between controlling insiders and external shareholders (Bertrand and Mullainathan 2003; Stulz 2005; Koirala et al. 2018). Following these findings, we examine whether and how institutional ownership and insider ownership moderate the effect of corporate governance reforms on firms' CSR performance. Data for institutional and insider ownership are obtained from the Capital IQ database.

The results of this analysis are presented in Table 12. In column (1), we interact *Post* with *HI_Institution* (i.e., an indicator variable equal to one if the firm's institutional ownership is greater than the median institutional ownership of all firms in the same industry and zero otherwise) and find a positive and significant coefficient on the interaction term *Post* × *HI_Institution* (0.01, significant at $p < 0.01$). This finding is consistent with institutional investors placing greater pressure on firms to engage in more CSR activities. In column (2) we interact *Post* with *HI_Insider*, an indicator variable equal to one if the firm's CEO ownership is greater than the median CEO ownership of all firms in the same industry and zero otherwise. The results show a significantly negative coefficient on *Post* × *HI_Insider* (-0.02, significant at $p < 0.01$), indicating a weakened effect of reforms on CSR performance when firms' insider ownership is high. Consistent with previous studies, our findings suggest that the presence of agency conflict reduces managers' incentives for CSR investment.

[Table 12 Here]

6.6. Corporate governance reform, CSR performance, and future financial performance

While our evidence suggests a positive effect of corporate governance reforms on CSR performance, there are two possible explanations underlying this finding. First, shareholders believe in the value-maximizing role of CSR so that corporate governance reforms may encourage firms to engage in more CSR activities that ultimately enhance shareholder value. Second, better CSR performance may simply result from the greater influence of outside board members who care about the societal effect of companies even if CSR investment does not increase shareholder wealth. To differentiate these two explanations, in this section, we examine whether and how reforms affect the relationship between CSR performance and firms' future financial performance.

Our proxy for firm value is Tobin's Q (*Tobin's Q*) because this variable captures the value of CSR achieved through various channels, such as increased future cash flows due to customer and supplier royalty, and lower cost of equity capital, which reflects the lower risk perceived by investors. Following previous studies (e.g., Waddock and Graves 1997; Servaes and Tamayo 2013; El Ghoul et al. 2017), we measure Tobin's Q as the ratio of a firm's market value to its book value of assets, in which the market value is calculated as the book value of total assets minus the book value of total equity plus the market value of equity.

Table 13 reports the results of this analysis. First, we find a positive and significant coefficient on *CSR_Perf*, indicating that CSR performance is positively related to future financial performance. This finding is in line with the findings of previous studies (e.g., El Ghoul et al. 2017; Tsang et al. 2019b). We also find a positive and significant coefficient on the three-way interaction term *CSR_Perf* × *Reform* × *Post*. This finding suggests that relative to firms domiciled in countries without reforms implemented during the same period, firms domiciled in countries with reforms are more likely to experience a strengthened relation between CSR performance and future financial performance subsequent to the reforms. Thus,

this finding lends support to the argument that corporate governance reforms foster substantive CSR performance with a strong implication to firm value.

[Table 13 Here]

6.7. CSR performance versus CSR reporting

Due to the increasing importance of CSR activities to firms' financial performance, many firms voluntarily publish CSR reports to signal their commitment to socially responsible behavior (Lanis and Richardson 2012) and reduce information asymmetry between firms and investors (Dhaliwal et al. 2011; 2012). There is also growing evidence that investors consider CSR information in their decisions (Clarkson et al. 2013; Griffin and Sun 2013; Elliott et al. 2014), suggesting that the transparency of CSR information matters to shareholder value. Other studies, however, argue that managers can use CSR reporting for purely symbolic purposes or "green-washing" (Weaver et al. 1999; Hemingway and Maclagan 2004; Kim et al. 2012; Ramanna 2013). That is, firms can disclose CSR information that deviates from actual CSR performance. Supporting this view, Petrenko et al. (2016) find evidence that firms implement CSR activities for image management without a real focus on improving financial performance.

While our evidence supports the positive influence of corporate governance reforms on firms' CSR performance, the studies discussed above suggest that instead of committing to more costly and substantive CSR investment, managers may simply improve their CSR reporting practices (Simnett et al. 2009; Ramanna 2013). Improved transparency of CSR performance after reform implementation presumably allows better monitoring by shareholders and discourages insiders from extracting private benefits from CSR investment, thereby promoting more substantive CSR performance. Alternatively, managers may voluntarily disclose more CSR information that deviates from their actual CSR performance for impression management (Clarkson et al. 2008; Chen et al. 2016; Muslu et al. 2019). That

is, a possible alternative channel through which reforms affect firms' CSR performance is changes in CSR reporting practices after reforms.

Thus, in this section, we examine whether and to what extent the implementation of corporate governance reforms in a country affects firms' CSR reporting practices. Following prior studies (e.g., Dhaliwal et al. 2012; Chen et al. 2016; Muslu et al. 2017; Tsang et al. 2019b), we use multiple CSR reporting variables to measure firms' CSR reporting practices. These variables are indicator variables measuring (1) whether a company issues a standalone CSR report in a particular year, *CSRDISC*, (2) whether a firm's CSR report is prepared in accordance with the GRI guidelines, *CSRDISC_GRI*, (3) whether a firm's CSR report is assured by an independent third party for its accuracy, completeness, and reliability, *CSRDISC_ASSURANCE*, and (4) whether a firm is integrating its CSR information in its annual report, *CSRDISC_INTEGRATE*. All of these data are obtainable from the ASSET4 database. We treat all of these variables as dependent variables and test the effect of reforms on each of them using a logistic model. However, in all of these tests, we find no evidence that managers alter their CSR reporting practices post-reforms.

7. Conclusion

CSR is generally considered to be corporate behavior that goes beyond the legal or regulatory requirements faced by the company (Kitzmueller and Shimshack 2012). Over the last two decades, CSR activities have become an increasingly important investment by firms. Despite anecdotal evidence that a growing number of multinational companies are actively involved in CSR initiatives (Porter and Kramer 2011), there are competing views regarding whether CSR investments enhance shareholder value or simply represent an agency cost enjoyed by managers at the expense of shareholders. These competing views are manifested in the mixed empirical evidence concerning the relationship between CSR practices and firm

financial performance (e.g., McWilliams and Siegel 2000; Orlitzky et al. 2003; Barnett and Salomon 2006; McWilliams et al. 2006).

As corporate governance reforms are undertaken to reduce agency conflicts between corporate insiders and shareholders, the agency cost perspective (Barnea and Rubin 2010; Krüger 2015; Masulis and Reza 2015) of CSR would suggest a decrease in CSR performance after corporate governance reforms. However, if CSR activities maximize shareholder value as suggested by the "doing well by doing good" perspective (Freeman 1984; Herremans et al. 1993; El Ghoul et al. 2011; Flammer 2015), CSR performance should improve after corporate governance reforms. Motivated by these contrasting expectations, we empirically examine the effect of corporate governance reforms on firms' CSR performance. Using a shock-based DID research design that includes both firm and year fixed effects, we find that firms' CSR performance improves following a country's implementation of corporate governance reforms.

Additional analyses show that relative to firms in countries with comply-or-explain reforms, the effect of corporate governance reforms on CSR performance is greater in countries with rule-based reforms. We also find that the positive effect of reforms on CSR performance is more pronounced when a society possesses a lower level of CSR awareness and when a country has a more stringent legal and regulatory environment. Further analysis shows that corporate governance reforms strengthen the positive relation between CSR performance and future financial performance, consistent with the value-enhancing role of CSR.

Overall, in this study, we document that the widespread adoption of corporate governance reforms appears to have a causal and positive effect on CSR performance worldwide. While the literature is inconclusive about the effect of corporate governance on CSR performance, we complement those studies by using a quasi-natural experiment that mitigates endogeneity concerns and thereby provides additional and more direct evidence of the effect of governance across different institutional environments.

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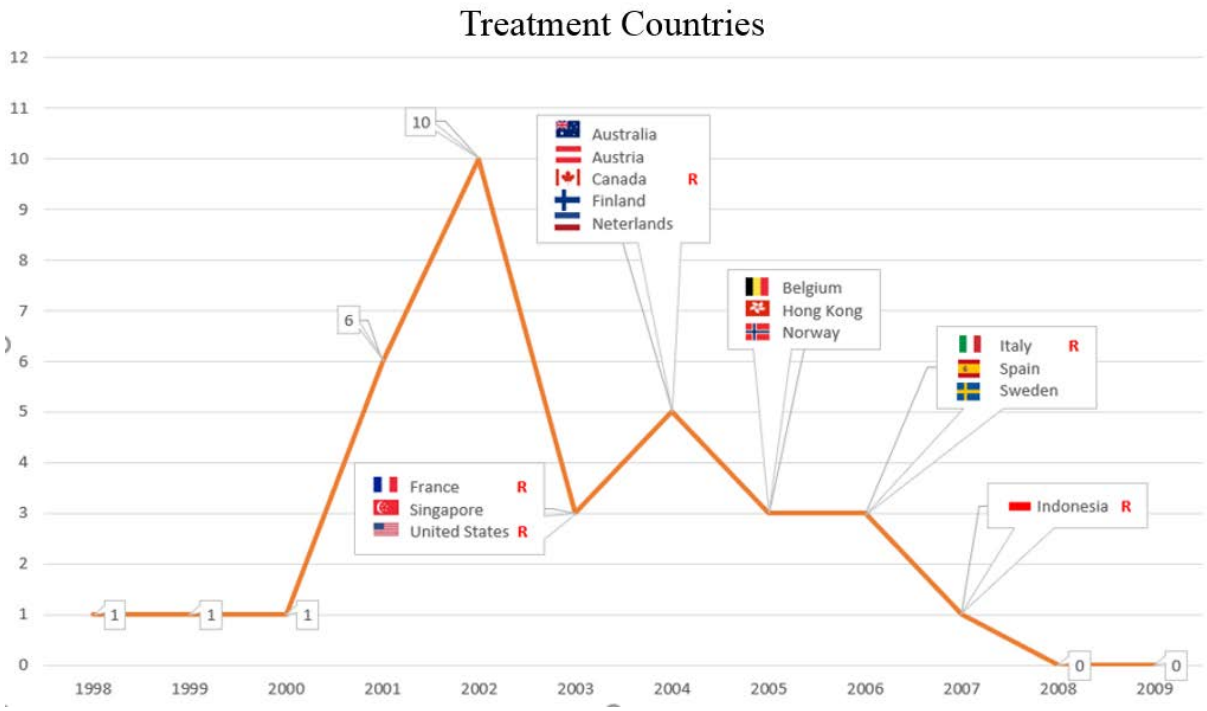

Note: Figure 1 shows the names of the 15 treatment countries in our analyses. **R** indicates that the reform implemented in the country is rule-based reform.

Appendix A - Major Corporate Governance Reforms Worldwide

	Country	Major Reform Year	Board Independence	Audit Committee and Auditor Independence	Chairman and CEO Role	Reform Approach
	(1)	(2)	(3)	(4)	(5)	(6)
1	Australia*	2004	1	1	1	Comply-or-explain
2	Austria*	2004	1	1	0	Comply-or-explain
3	Belgium*	2005	1	1	1	Comply-or-explain
4	Brazil	2002	0	0	0	Rule-based
5	Canada*	2004	1	1	1	Rule-based
6	Chile	2001	0	1	0	Rule-based
7	China	2001	1	1	0	Rule-based
8	Denmark	2001	1	0	0	Comply-or-explain
9	Finland*	2004	1	1	1	Comply-or-explain
10	France*	2003	0	1	0	Rule-based
11	Germany	2002	1	1	0	Comply-or-explain
12	Greece	2002	1	1	0	Rule-based
13	Hong Kong*	2005	1	1	1	Comply-or-explain
14	India	2002	1	1	0	Rule-based
15	Indonesia*	2007	1	1	0	Rule-based
16	Israel	2000	1	1	1	Rule-based
17	Italy*	2006	1	1	0	Rule-based
18	Japan	2002	0	1	0	Rule-based
19	Malaysia	2001	1	1	0	Comply-or-explain
20	Mexico	2001	1	1	0	Rule-based
21	Netherlands*	2004	1	1	1	Comply-or-explain
22	Norway*	2005	1	1	1	Comply-or-explain
23	Philippines	2002	1	1	0	Comply-or-explain
24	Poland	2002	1	0	0	Comply-or-explain
25	Portugal	2001	1	1	0	Rule-based
26	Singapore*	2003	1	1	0	Comply-or-explain
27	South Korea	1999	1	1	0	Rule-based
28	Spain*	2006	1	1	0	Comply-or-explain
29	Sweden*	2006	1	1	1	Comply-or-explain
30	Switzerland	2002	0	0	0	Comply-or-explain
31	Thailand	2002	1	1	0	Comply-or-explain
32	Turkey	2002	1	0	1	Comply-or-explain
33	United Kingdom	1998	1	1	1	Comply-or-explain
34	United States*	2003	1	1	0	Rule-based

Note: Appendix A reports the characteristics of major corporate governance reforms by country. Column 2 presents the year in which the reform became effective. Columns 3 to 5 present whether a reform covers board independence, audit committee and auditor independence, and separation of the chairman and CEO positions, respectively. Column 6 reports the type of reform approach. * indicates countries in the treatment group examined in our study. Data source: Fauver et al. (2017).

Appendix B - Summary of Variable Definitions

Variable	Definition	Data Source
CSR_Perf	The average of the environment performance score and the social performance score.	ASSET4
ENV_Perf	Environment performance score	ASSET4
SOC_Perf	Social performance score	ASSET4
Tobin's Q	The book value of total assets minus the book value of equity plus the market value of equity divided by book value of total assets.	Capital IQ
Post	An indicator variable that equals 1 for the year in which the corporate governance reform in a country became effective and afterward, and 0 otherwise.	Fauver et al. (2017)
Reform	An indicator variable that equals 1 if corporate governance reform is implemented during our sample period and 0 if it is not.	Fauver et al. (2017)
Size	The natural logarithm of total assets (in millions of US dollars).	Capital IQ
Age	The natural logarithm of firm age, which is defined as the number of years since the firm was incorporated (plus 1).	Capital IQ
RD	The ratio of total research and development expense to net sales for a given year.	Capital IQ
Leverage	The ratio of total debt divided by total assets.	Capital IQ
Accrual	A measure of firm-level financial opacity measured by country-industry-year-adjusted total scaled accruals based on Bhattacharya et al. (2003). $ACCRUAL = (\Delta CA - \Delta CL - \Delta CASH + \Delta STD - DEP + \Delta TP)/\text{lag}(TA)$, where ΔCA is the change in total current assets; ΔCL is the change in total current liabilities; $\Delta CASH$ is the change in cash; ΔSTD is the change in the current portion of long-term debt included in total current liabilities; DEP is depreciation and amortization expense; ΔTP is the change in income taxes payable; and lag(TA) is total assets at the end of the previous year.	Capital IQ
Competition	It equals to Herfindahl index multiply (-1), where the Herfindahl index is calculated as the sum of the squares of fractional market shares of firms within each two-digit SIC industry for each country in a given year.	Capital IQ
SalesGrowth	The total revenues at year t minus total revenues at year t-1 divided by total revenues at year t-1.	Capital IQ
Capital	The ratio of capital expenditures to total assets.	Capital IQ
MB	The ratio of market value of equity to book value of equity.	Capital IQ
Institution	The proportion of shares held by all types of institutional investors, measured at the end of year t.	Capital IQ
Nmarket	The number of stock exchanges on which a firm is listed in a given year (plus 1, to account for the listing of a firm's stock in its home country).	Capital IQ
Analyst	The number of analysts following a firm in a given year.	I/B/E/S
Big4Auditor	An indicator variable equal to 1 if a firm's auditor is a big four auditor and 0 otherwise.	Capital IQ
CG_Perf	Corporate governance score	ASSET4
Rule	An indicator equal to 1 if a country's corporate governance reform is rule-based and 0 if a country's corporate governance reform is comply-or-explain based.	Fauver et al. (2017)
HI_Pubaware	An indicator variable which equals to one (zero) if the CSR public awareness index is above (below) the sample median. The CSR public awareness index is obtained from Dhaliwal et al. (2012). It is measured at the country level and calculated as the mean rank score of (1) the number of non-government organizations per million population and (2) total number of CSR reports issued by non-commercial organizations divided by millions in population in each country.	Dhaliwal et al. (2012)
HI_InvPro	An indicator variable which equals one (zero) if the investor protection index is above (below) the sample median. The investor protection index measures the strength of investor protection in a country and is obtained from "Doing Business Indicators" by the International Finance Corporation and World Bank.	International Finance Corporation, World Bank
HI_RegQual	An indicator variable that equals one (zero) if the regulatory quality index is above (below) the sample median. The regulatory quality index measures the level of credit market regulations, labor market regulations, and business regulations in a country, and is obtained from "Economic Freedom of the World" by Fraser Institute.	Fraser Institute
Insider	The percentage of shares (end-of-year) held by the CEO.	Capital IQ

Appendix C - CSR Categories (Data source: ASSET4)

	Category	Definition
		I. Environment Pillar
1	*Resource Reduction*	A company's management commitment and effectiveness toward achieving an efficient use of natural resources in the production process.
2	*Emissions Reduction*	A company's management commitment and effectiveness toward reducing environmental emissions in the production and operational processes.
3	*Product Innovation*	A company's management commitment and effectiveness toward supporting the research and development of eco-efficient products or services.
		II. Social Pillar
4	*Workforce / Employment Quality*	A company's management commitment and effectiveness toward providing high-quality employment benefits and job conditions.
5	*Workforce / Health and Safety*	A company's management commitment and effectiveness toward providing a healthy and safe workplace.
6	*Workforce / Training and Development*	A company's management commitment and effectiveness toward providing training and development (education) for its workforce.
7	*Workforce / Diversity and Opportunity*	A company's management commitment and effectiveness toward maintaining diversity and equal opportunities in its workforce.
8	*Society / Human Rights*	A company's management commitment and effectiveness toward respecting fundamental human rights conventions.
9	*Society / Community*	A company's management commitment and effectiveness toward maintaining the company's reputation within the general community (local, national, and global).
10	*Customer / Product Responsibility*	A company's management commitment and effectiveness toward creating value-added products and services upholding customers' security.

Table 1 Sample Distribution

Panel A: Sample distribution by country

	Country	Full Sample		Constant Sample				
		Obs.	*CSR_Perf*	Obs.	*CSR_Perf*	Pre-reform	Post-reform	*Diff (Post-Pre)*
				Treatment Group (Reform =1)				
1	Australia	1,047	0.385	30	0.847	0.841	0.849	*0.009*
2	Austria	150	0.539	87	0.566	0.629	0.538	*-0.092**
3	Belgium	209	0.506	162	0.501	0.468	0.522	*0.054*
4	Canada	1,349	0.372	118	0.776	0.751	0.789	*0.038*
5	France	677	0.743	388	0.810	0.729	0.831	*0.102****
6	Finland	203	0.710	140	0.723	0.71	0.728	*0.018*
7	Hong Kong	519	0.342	279	0.424	0.348	0.454	*0.106****
8	Indonesia	51	0.551	N/A	N/A	N/A	N/A	*N/A*
9	Italy	304	0.602	269	0.597	0.549	0.636	*0.087***
10	Netherlands	277	0.682	175	0.746	0.646	0.798	*0.153****
11	Norway	155	0.650	142	0.640	0.603	0.663	*0.060*
12	Singapore	287	0.347	N/A	N/A	N/A	N/A	*N/A*
13	Spain	333	0.705	284	0.720	0.638	0.792	*0.154****
14	Sweden	388	0.633	364	0.648	0.596	0.691	*0.096****
15	United States	6,394	0.434	3,412	0.505	0.358	0.546	*0.188****
	Subtotal	***12,343***	***0.467***	***5,850***	***0.569***	***0.487***	***0.600***	***0.113****
				Benchmark Group (Reform =0)				
16	Brazil	177	0.580	N/A	N/A	N/A	N/A	N/A
17	Chile	49	0.446	N/A	N/A	N/A	N/A	N/A
18	China	308	0.277	10	0.686	0.476	0.776	0.300***
19	Denmark	176	0.547	137	0.552	0.480	0.583	0.103**
20	Greece	139	0.461	91	0.439	0.596	0.691	0.096***
21	Germany	566	0.656	301	0.727	0.671	0.752	0.082**
22	India	157	0.603	N/A	N/A	N/A	N/A	N/A
23	Israel	32	0.261	10	0.280	0.151	0.336	0.185
24	Japan	2,828	0.537	240	0.759	0.673	0.796	0.124***
25	Malaysia	96	0.419	N/A	N/A	N/A	N/A	N/A
26	Mexico	96	0.472	10	0.905	0.903	0.905	0.002
27	Philippines	37	0.392	N/A	N/A	N/A	N/A	N/A
28	Poland	42	0.368	N/A	N/A	N/A	N/A	N/A
29	Portugal	69	0.736	28	0.792	0.673	0.831	0.158***
30	South Korea	239	0.605	10	0.884	0.794	0.923	0.129***
31	Switzerland	540	0.573	351	0.663	0.611	0.686	0.075**
32	Turkey	53	0.505	N/A	N/A	N/A	N/A	N/A
33	Thailand	43	0.558	N/A	N/A	N/A	N/A	N/A

34	United Kingdom	2,303	0.607	860	0.738	0.715	0.749	0.034**
	Subtotal	***7,950***	***0.558***	***2,048***	***0.700***	***0.654***	***0.721***	***0.068****
	Overall Total	**20,293**	**0.503**	**7,898**	**0.603**	**0.535**	**0.630**	**0.095***

Panel B: Sample distribution by year

Year	Full Sample		Constant Sample	
	Obs.	***CSR_Perf***	**Obs.**	***CSR_Perf***
2002	784	0.494	775	0.495
2003	791	0.498	782	0.498
2004	1,517	0.487	844	0.569
2005	1,862	0.490	855	0.566
2006	1,878	0.493	843	0.564
2007	2,029	0.505	794	0.611
2008	2,392	0.509	774	0.650
2009	2,735	0.507	762	0.685
2010	3,129	0.509	745	0.700
2011	3,176	0.511	724	0.714
Total	20,293	0.503	7,898	0.603

Panel C: Sample distribution by industry

Industry	Full Sample		Constant Sample	
	Obs.	***CSR_Perf***	**Obs.**	***CSR_Perf***
(1) Mining/Construction	1,432	0.463	307	0.667
(2) Food	912	0.557	362	0.613
(3) Textiles/Print/Publish	925	0.539	433	0.574
(4) Chemicals	923	0.700	432	0.728
(5) Pharmaceuticals	656	0.521	335	0.633
(6) Extractive	1,249	0.455	388	0.647
(7) Manf: Rubber/Glass/Etc.	493	0.661	193	0.720
(8) Manf: Metal	697	0.561	227	0.626
(9) Manf: Machinery	756	0.567	324	0.621
(10) Manf: Electrical Equipment	527	0.609	252	0.647
(11) Manf: Transport Equipment	727	0.663	315	0.772
(12) Manf: Instruments	671	0.518	344	0.571
(13) Manf: Misc.	105	0.498	39	0.530
(14) Computers	1,714	0.468	696	0.513
(15) Transportation	1,870	0.498	790	0.605
(16) Utilities	1,233	0.599	550	0.688
(17) Retail: Wholesale	518	0.448	177	0.545
(18) Retail: Misc.	1,260	0.441	527	0.565
(19) Retail: Restaurant	181	0.558	96	0.661
(20) Insurance/Real Estate	1,751	0.358	521	0.496
(21) Services	1,311	0.386	460	0.463
(22) Others	382	0.351	130	0.465
Total	20,293	0.503	7,898	0.603

Note: Panels A, B, and C of this table present the sample distributions by country, year, and industry, respectively. The industry definition of Panel C is based on the industry classification of Barth et al. (1998). We exclude firms in the financial industry (SIC codes 6000-6411) from our sample. In the constant sample, we require a firm to appear for at least one year in the pre- and post-reform periods.

Table 2 Summary Statistics (N=20,293)

Variable	Mean	Std. Dev.	25%	50%	75%
CSR_Perf	0.503	0.295	0.215	0.477	0.800
ENV_Perf	0.507	0.318	0.180	0.472	0.846
SOC_Perf	0.499	0.309	0.199	0.485	0.806
Tobin's Q	1.686	1.025	1.069	1.353	1.913
Post	0.907	0.290	1.000	1.000	1.000
Reform	0.608	0.488	0.000	1.000	1.000
Size	8.592	1.382	7.688	8.513	9.489
Age	3.790	0.947	3.135	3.932	4.554
RD	0.017	0.046	0.000	0.000	0.000
Leverage	0.560	0.204	0.425	0.570	0.698
Accrual	0.000	0.097	-0.034	0.000	0.035
Competition	-0.253	0.248	-0.352	-0.146	-0.082
SalesGrowth	0.140	0.322	-0.013	0.096	0.225
Capital	-0.052	0.052	-0.068	-0.038	-0.017
MB	2.616	2.798	1.162	1.879	3.147
Institution	0.379	0.342	0.005	0.297	0.690
Nmarket	1.308	0.653	1.000	1.000	1.000
Analyst	12.84	11.23	0.000	12.000	20.000
Big4Auditor	0.776	0.417	1.000	1.000	1.000

Note: This table presents the summary statistics for the main variables used in regression analyses. All variables are defined in Appendix B.

Table 3 Corporate Governance Reform and CSR Performance—Staggered DID

	(1)	(2)	(3)
Dependent Variable	*CSR_Perf*	*ENV_Perf*	*SOC_Perf*
Post	**0.021*** **	**0.022*** **	**0.020*** **
	(0.005)	**(0.006)**	**(0.006)**
Size	0.022***	0.021***	0.023***
	(0.003)	(0.004)	(0.004)
Age	0.030***	0.039***	0.022*
	(0.010)	(0.012)	(0.012)
RD	0.105	0.059	0.149
	(0.088)	(0.103)	(0.101)
Leverage	-0.035***	-0.009	-0.061***
	(0.012)	(0.014)	(0.014)
Accrual	-0.005	-0.008	-0.002
	(0.010)	(0.012)	(0.012)
Competition	-0.016	-0.026	-0.006
	(0.020)	(0.023)	(0.022)
SalesGrowth	-0.009***	-0.010**	-0.008**
	(0.003)	(0.004)	(0.004)
Capital	-0.008	0.043	-0.059
	(0.038)	(0.045)	(0.043)
MB	0.001**	0.001	0.001**
	(0.001)	(0.001)	(0.001)
Institution	-0.013*	-0.012	-0.014*
	(0.007)	(0.008)	(0.008)
Nmarket	-0.010**	-0.003	-0.017***
	(0.004)	(0.005)	(0.005)
Analyst	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)
Big4Auditor	-0.002	-0.000	-0.005
	(0.005)	(0.005)	(0.005)
Constant	0.081*	0.052	0.109**
	(0.045)	(0.053)	(0.051)
Obs.	20,293	20,293	20,293
R-squared	0.223	0.172	0.180
Firm FE	YES	YES	YES
Year FE	YES	YES	YES

Note: This table presents the regression results for the effect of corporate governance reform on CSR performance. The dependent variable in column (1) is *CSR_Perf*, measured as the average of environmental performance and social performance scores in ASSET4. The dependent variable in column (2) is *EVN_Perf*, which is the environmental performance score in ASSET4. The dependent variable in column (3) is *SOC_Perf*, which is the social performance score in ASSET4. *Post* is an indicator variable that equals 1 for the year that corporate governance reform became effective in a country and afterward, and 0 otherwise. All of the variables are defined in Appendix B. Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 4 Corporate Governance Reform and CSR Performance—Alternative DID Design

	(1)	(2)	(3)	(4)
Benchmark Country	Non-reformed Countries as Benchmark		U.K. as Benchmark	
	Full Sample	PSM Sample	Full Sample	PSM Sample
Dependent Variable	*CSR_Perf*	*CSR_Perf*	*CSR_Perf*	*CSR_Perf*
Post	**-0.025*** **	**-0.019** **	**-0.056*** **	**-0.044*** **
	(0.007)	**(0.008)**	**(0.009)**	**(0.013)**
Reform	**-0.216*** **	**-0.203*** **	**-0.228*** **	**-0.238*** **
	(0.017)	**(0.018)**	**(0.016)**	**(0.024)**
Reform* × *Post	**0.028*** **	**0.017** **	**0.049*** **	**0.037*** **
	(0.006)	**(0.007)**	**(0.009)**	**(0.013)**
Size	0.075***	0.076***	0.077***	0.078***
	(0.002)	(0.003)	(0.002)	(0.004)
Age	0.044***	0.040***	0.044***	0.030***
	(0.003)	(0.004)	(0.004)	(0.006)
RD	0.297***	0.449***	0.346***	0.305
	(0.065)	(0.087)	(0.072)	(0.192)
Leverage	0.001	-0.021*	0.022*	0.030
	(0.010)	(0.012)	(0.012)	(0.019)
Accrual	-0.003	-0.006	-0.000	-0.010
	(0.010)	(0.012)	(0.012)	(0.021)
Competition	0.012	0.020	-0.012	0.006
	(0.014)	(0.015)	(0.016)	(0.024)
SalesGrowth	-0.018***	-0.021***	-0.018***	-0.033***
	(0.003)	(0.004)	(0.004)	(0.008)
Capital	-0.057*	-0.036	-0.017	0.176**
	(0.034)	(0.041)	(0.039)	(0.081)
MB	0.002***	0.003***	0.002***	0.002***
	(0.001)	(0.001)	(0.001)	(0.001)
Institution	-0.008	-0.012	-0.001	0.020*
	(0.006)	(0.008)	(0.007)	(0.012)
Nmarket	0.010***	0.008**	0.007*	0.013
	(0.003)	(0.004)	(0.004)	(0.010)
Analyst	0.002***	0.002***	0.001***	0.001**
	(0.000)	(0.000)	(0.000)	(0.000)
Big4Auditor	0.001	0.002	0.004	-0.009
	(0.004)	(0.004)	(0.006)	(0.011)
Constant	-0.255***	-0.228***	-0.270***	-0.188***
	(0.024)	(0.027)	(0.026)	(0.040)
Obs.	20,293	15,900	14,646	4,606
Firm FE	NO	NO	NO	NO
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Note: This table presents the regression results for the effect of corporate governance reform on CSR performance using the alternative DID design. *Post* is an indicator variable that equals 1 starting the year in which corporate governance reform became effective in a country and 0 otherwise. *Reform* is an indicator variable that equals 1 if the firm is in a country that implemented corporate governance reform during our sample period and 0 otherwise. The pseudo (i.e., assigned) reform year for benchmark countries is 2004. Columns (1) and (2) report the results by using 19 non-reformed countries as the benchmark. Columns (3) and (4) report the results by using U.K. as the benchmark. In columns (2) and (4), we match firms in the treatment group with firms in the benchmark group using PSM. All other variables are defined in Appendix B. Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5 Various Robustness Tests

	(1)	(2)	(3)	(4)	(5)	(6)
Sample	Constant Sample	[-1, 1] window	Excluding U.S.	WLS Regression	Controlling *CG_Perf*	Alternative CSR Performance Measure
Dependent Variable	*CSR_Perf*	*CSR_Perf*	*CSR_Perf*	*CSR_Perf*	*CSR_Perf*	*CSR_Perf_Adj*
Post	**0.020*** **	**0.041*** **	**0.016** **	**0.087*** **	**0.014** **	**0.003** **
	(0.007)	**(0.014)**	**(0.007)**	**(0.007)**	**(0.006)**	**(0.001)**
Size	0.021***	0.038*	0.038***	0.074***	0.017***	-0.004***
	(0.006)	(0.022)	(0.007)	(0.002)	(0.006)	(0.001)
Age	0.050**	-0.058	0.040*	0.045***	0.028	0.008*
	(0.020)	(0.092)	(0.022)	(0.003)	(0.019)	(0.004)
RD	0.219	-0.845*	0.288	0.485***	0.222	0.001
	(0.142)	(0.499)	(0.215)	(0.054)	(0.138)	(0.030)
Leverage	-0.062***	-0.182**	-0.138***	0.111***	-0.046**	-0.004
	(0.020)	(0.078)	(0.027)	(0.015)	(0.020)	(0.004)
Accrual	0.024	-0.044	0.011	0.110***	0.019	0.002
	(0.021)	(0.055)	(0.027)	(0.033)	(0.020)	(0.004)
Competition	-0.020	-0.183	-0.009	-0.141***	-0.019	-0.005
	(0.033)	(0.190)	(0.032)	(0.011)	(0.032)	(0.007)
SalesGrowth	-0.009	-0.004	-0.030***	-0.077***	-0.003	-0.001
	(0.008)	(0.023)	(0.010)	(0.012)	(0.008)	(0.002)
Capital	0.091	0.375	0.060	-0.554***	0.043	0.054***
	(0.089)	(0.276)	(0.103)	(0.071)	(0.086)	(0.019)
MB	0.002*	0.002	0.003**	0.003***	0.001*	0.000***
	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)	(0.000)
Institution	-0.068***	-0.261***	-0.026	-0.032***	-0.064***	0.004
	(0.013)	(0.089)	(0.017)	(0.009)	(0.012)	(0.003)
Nmarket	-0.023***	0.019	0.014**	0.028***	-0.033***	-0.006***
	(0.005)	(0.023)	(0.006)	(0.003)	(0.005)	(0.001)
Analyst	0.001***	-0.000	0.001***	0.001***	0.001**	-0.000
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
Big4Auditor	0.009	0.019	0.022**	0.055***	0.004	0.005***
	(0.009)	(0.035)	(0.009)	(0.008)	(0.008)	(0.002)
CG_Perf					0.253***	
					(0.012)	
Constant	0.171*	0.515	0.136	-0.546***	0.178**	0.547***
	(0.089)	(0.400)	(0.105)	(0.025)	(0.087)	(0.019)
Obs.	7,898	1,278	4,486	7,898	7,898	7,898
R-squared	0.240	0.172	0.177	0.335	0.287	0.042
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Note: This table presents the regression results of various robustness tests examining the effect of corporate governance reform on CSR performance. *Post* is an indicator variable that equals 1 starting the year in which corporate governance reform became effective in a country and 0 otherwise. Column (1) reports the results based on the constant sample. Column (2) reports the results using a window of one year before and one year after reform to measure changes in CSR performance. Column (3) excludes U.S. firms from the sample. Column (4) uses WLS regression estimation on the constant sample. Column (5) adds a corporate governance score (*CG_Perf*) provided by ASSET4 as an additional control variable. Column (6) uses an adjusted CSR performance variable, *CSR_Perf_Adj*, as the dependent variable. Specifically, we adjust the CSR performance scores by subtracting the industry-year mean value of *CSR_Perf* from the firm's *CSR_Perf*. All other variables are defined in Appendix B. Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 6 Corporate Governance Reform and CSR Performance—Dynamic DID Design

	(1)	(2)	(3)
Dependent Variable	***CSR_Perf***	***ENV_Perf***	***SOC_Perf***
Post_1	-0.217***	-0.199***	-0.227***
	(0.016)	(0.017)	(0.018)
Post_2	0.006	0.005	0.006
	(0.009)	(0.010)	(0.010)
Post_3 and above	-0.023**	-0.020*	-0.025**
	(0.010)	(0.011)	(0.011)
Reform	-0.006	-0.012	0.002
	(0.010)	(0.011)	(0.011)
Reform*Post_1	-0.001	0.006	-0.007
	(0.009)	(0.010)	(0.010)
Reform*Post_2	**0.033*** **	**0.038*** **	**0.027*** **
	(0.008)	**(0.010)**	**(0.009)**
Reform*Post_3 and above	**0.034*** **	**0.049*** **	**0.017*** **
	(0.005)	**(0.006)**	**(0.006)**
Size	0.075***	0.078***	0.078***
	(0.002)	(0.002)	(0.002)
Age	0.044***	0.042***	0.045***
	(0.003)	(0.004)	(0.004)
RD	0.306***	0.333***	0.308***
	(0.065)	(0.072)	(0.072)
Leverage	0.000	0.019	-0.015
	(0.010)	(0.012)	(0.012)
Accrual	-0.001	-0.002	0.001
	(0.010)	(0.012)	(0.012)
Competition	0.009	0.009	0.014
	(0.014)	(0.016)	(0.016)
SalesGrowth	-0.017***	-0.019***	-0.016***
	(0.003)	(0.004)	(0.004)
Capital	-0.056*	-0.038	-0.088**
	(0.034)	(0.039)	(0.039)
MB	0.002***	0.002***	0.003***
	(0.001)	(0.001)	(0.001)
Institution	-0.005	-0.005	-0.006
	(0.006)	(0.007)	(0.007)
Nmarket	0.008**	0.014***	0.006
	(0.003)	(0.004)	(0.004)
Analyst	0.002***	0.001***	0.002***
	(0.000)	(0.000)	(0.000)
Big4Auditor	-0.001	0.000	-0.001
	(0.004)	(0.005)	(0.005)
Constant	-0.259***	-0.281***	-0.277***
	(0.024)	(0.026)	(0.027)
Obs.	20,293	20,293	20,293
Country FE	YES	YES	YES
Industry FE	YES	YES	YES
Year FE	YES	YES	YES

Note: This table presents the regression results for the effect of board reforms on CSR performance by using dynamic DID design. *Post_1* indicates the first year after reform; *Post_2* indicates the second year after reform; *Post_3 & Above* indicates the third and all subsequent years after reforms. All other variables are defined in Appendix B. Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 7 Summary of Year-by-Year DID Regression Results

Panel A: Using constant full sample

(1) Reform Year	(2) Estimated Coefficients of β_3	(3) P-Value	(4) No. of Treatment Countries	(5) Benchmark Country
2003	0.105***	0.000	1	United Kingdom
2004	-0.010	0.589	5	United Kingdom
2005	0.054***	0.003	3	United Kingdom
2006	0.048***	0.004	3	United Kingdom

Panel B: Using constant PSM sample

(1) Reform Year	(2) Estimated Coefficients of β_3	(3) P-Value	(4) No. of Treatment Countries	(5) Benchmark Country
2003	0.057***	0.006	1	United Kingdom
2004	-0.023	0.333	5	United Kingdom
2005	0.068***	0.001	3	United Kingdom
2006	0.031*	0.078	3	United Kingdom

Note: This table reports the summary of year-by-year DID regression results estimating the effect of corporate governance reforms on firms' CSR performance in countries with reforms implemented in year *t*, relative to firms in the U.K. in year *t*, during the 2003-2006 period. In this test, we require firms to appear in both the pre- and post-reform period. Our regression model is $CSR\_Perf = \beta_0 + \beta_1 Post + \beta_2 Reform + \beta_3 Reform \times Post + \beta_k \sum Controls_{ijt} + YearFE + IndustryFE + CountryFE + \varepsilon_{ijt,}$. *CSR_Perf* is measured as the average of the environmental performance and social performance scores in ASSET4. *Reform* is an indicator variable that equals 1 if the country implements corporate governance reform and 0 otherwise (i.e., for U.K. firms, *Reform*=0). *Post* is an indicator variable that equals 1 for the year that corporate governance reform became effective in a country and afterward, and 0 otherwise. We assign a pseudo reform year for all U.K. firms based on the reform year of the treatment firms. In this table, we do not include test for 2007 because there is only one country, Indonesia implemented reforms in 2007. Although there is 51 obs. included in Indonesia, there is no constant sample available for conducting this analysis. All of the variables are defined in Appendix B. Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 8 Corporate Governance Reform Type and CSR Performance

	(1)	(2)	(3)
Reform Type	Board Independence	Audit Committee and Auditor Independence	Chairman and CEO Role
Dependent Variable	*CSR_Perf*	*CSR_Perf*	*CSR_Perf*
Post	**0.020*** **	**0.020*** **	**0.017** **
	(0.006)	**(0.005)**	**(0.008)**
Size	0.023***	0.023***	0.042***
	(0.004)	(0.003)	(0.005)
Age	0.024**	0.025**	0.023
	(0.011)	(0.010)	(0.016)
RD	0.129	0.171*	-0.207
	(0.108)	(0.090)	(0.203)
Leverage	-0.019	-0.025**	-0.039**
	(0.013)	(0.013)	(0.020)
Accrual	-0.000	-0.005	-0.018
	(0.011)	(0.011)	(0.015)
Competition	-0.021	-0.022	-0.023
	(0.020)	(0.020)	(0.022)
SalesGrowth	-0.007*	-0.010***	-0.018***
	(0.004)	(0.004)	(0.005)
Capital	0.020	-0.015	0.042
	(0.042)	(0.038)	(0.053)
MB	0.001*	0.001*	0.001
	(0.001)	(0.001)	(0.001)
Institution	-0.009	-0.008	0.014
	(0.008)	(0.007)	(0.012)
Nmarket	-0.011**	-0.012***	-0.020***
	(0.005)	(0.004)	(0.007)
Analyst	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)
Big4Auditor	0.002	-0.004	-0.002
	(0.007)	(0.005)	(0.010)
Constant	0.067	0.080*	0.030
	(0.049)	(0.045)	(0.066)
Obs.	16,022	19,305	6,535
R-squared	0.235	0.225	0.207
Firm FE	YES	YES	YES
Year FE	YES	YES	YES

Note: This table reports the results of the effect on CSR performance for each type of corporate governance reform: (1) board independence, (2) audit committee and auditor independence, and (3) separation of board chairman and CEO positions. *Post* is an indicator variable that equals 1 for the year that corporate governance reform became effective in a country and afterward, and 0 otherwise. All variables are defined in Appendix B. Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 9 Comply-or-Explain vs. Rule-based Reform and CSR Performance

	(1)	(2)	(3)
Dependent Variable	*CSR_Perf*	*ENV_Perf*	*SOC_Perf*
Post	**-0.007**	**-0.006**	**-0.008**
	(0.006)	**(0.008)**	**(0.007)**
Post × Rule	**0.057*** **	**0.056*** **	**0.057*** **
	(0.008)	**(0.009)**	**(0.009)**
Size	0.022***	0.021***	0.024***
	(0.003)	(0.004)	(0.004)
Age	0.031***	0.040***	0.023**
	(0.010)	(0.012)	(0.012)
RD	0.119	0.074	0.164
	(0.088)	(0.103)	(0.101)
Leverage	-0.037***	-0.011	-0.063***
	(0.012)	(0.014)	(0.014)
Accrual	-0.006	-0.009	-0.003
	(0.010)	(0.012)	(0.012)
Competition	-0.010	-0.020	0.000
	(0.019)	(0.023)	(0.022)
SalesGrowth	-0.010***	-0.011***	-0.009**
	(0.003)	(0.004)	(0.004)
Capital	-0.007	0.044	-0.059
	(0.038)	(0.045)	(0.043)
MB	0.001**	0.001	0.002***
	(0.001)	(0.001)	(0.001)
Institution	-0.010	-0.009	-0.011
	(0.007)	(0.008)	(0.008)
Nmarket	-0.005	0.002	-0.013***
	(0.004)	(0.005)	(0.005)
Analyst	0.001***	0.001***	0.002***
	(0.000)	(0.000)	(0.000)
Big4Auditor	-0.001	0.002	-0.003
	(0.005)	(0.005)	(0.005)
Constant	0.069	0.041	0.098*
	(0.045)	(0.053)	(0.051)
Obs.	20,293	20,293	20,293
R-squared	0.225	0.174	0.182
Firm FE	YES	YES	YES
Year FE	YES	YES	YES

Note: This table reports the cross-sectional variation of corporate governance reforms on CSR performance based on a country's reform approach. *Rule* is an indicator that equals 1 if a country adopts a rule-based reform approach and 0 if a country adopts a comply-or-explain reform approach. All other variables are defined in Appendix B. Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 10 CSR Awareness, Corporate Governance Reform, and CSR Performance

	(1)	(2)	(3)
Dependent Variable	*CSR_Perf*	*ENV_Perf*	*SOC_Perf*
Post	0.072***	0.082***	0.063***
	(0.007)	(0.008)	(0.008)
Post × HI_Pubaware	**-0.081*** **	**-0.094*** **	**-0.068*** **
	(0.008)	**(0.009)**	**(0.009)**
Size	0.022***	0.022***	0.022***
	(0.003)	(0.004)	(0.004)
Age	0.023**	0.033***	0.014
	(0.011)	(0.012)	(0.012)
RD	0.133	0.089	0.176*
	(0.089)	(0.105)	(0.103)
Leverage	-0.034***	-0.010	-0.059***
	(0.012)	(0.015)	(0.014)
Accrual	-0.002	-0.004	0.000
	(0.011)	(0.012)	(0.012)
Competition	-0.010	-0.023	0.004
	(0.020)	(0.023)	(0.023)
SalesGrowth	-0.011***	-0.012***	-0.010**
	(0.004)	(0.004)	(0.004)
Capital	-0.011	0.041	-0.062
	(0.038)	(0.045)	(0.044)
MB	0.001***	0.001*	0.002***
	(0.001)	(0.001)	(0.001)
Institution	-0.007	-0.006	-0.009
	(0.007)	(0.008)	(0.008)
Nmarket	0.001	0.009*	-0.008
	(0.004)	(0.005)	(0.005)
Analyst	0.001***	0.001***	0.002***
	(0.000)	(0.000)	(0.000)
Big4Auditor	0.004	0.007	-0.000
	(0.005)	(0.005)	(0.005)
Constant	0.100**	0.061	0.139***
	(0.046)	(0.054)	(0.053)
Obs.	19,434	19,434	19,434
R-squared	0.227	0.177	0.182
Firm FE	YES	YES	YES
Year FE	YES	YES	YES

Note: This table reports the cross-sectional variation of the effect of corporate governance reform on CSR performance based on the level of a country's public awareness of CSR issues. *HI_Pubaware* is an indicator variable which equals to one (zero) if the mean rank score of (1) the number of non-government organizations per million population and (2) total number of CSR reports issued by non-commercial organizations divided by millions in population for each country is above (below) the sample median in the same year. All other variables are defined in Appendix B. Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 11 Stringency of Legal Environment, Corporate Governance Reform, and CSR Performance

	(1)	(2)
Stringency of Legal Environment	Investor Protection	Regulatory Quality
Dependent Variable	*CSR_Perf*	*CSR_Perf*
Post	0.019***	0.020***
	(0.006)	(0.005)
Post × HI_InvPro	**0.008***	
	(0.005)	
Post ×HI_RegQual		**0.008****
		(0.003)
Size	0.022***	0.022***
	(0.003)	(0.003)
Age	0.030***	0.029***
	(0.010)	(0.010)
RD	0.105	0.109
	(0.088)	(0.088)
Leverage	-0.036***	-0.035***
	(0.012)	(0.012)
Accrual	-0.006	-0.005
	(0.010)	(0.010)
Competition	-0.016	-0.018
	(0.020)	(0.020)
SalesGrowth	-0.009***	-0.009***
	(0.003)	(0.003)
Capital	-0.003	-0.003
	(0.038)	(0.038)
MB	0.001**	0.001**
	(0.001)	(0.001)
Institution	-0.012	-0.010
	(0.007)	(0.007)
Nmarket	-0.010**	-0.011***
	(0.004)	(0.004)
Analyst	0.001***	0.001***
	(0.000)	(0.000)
Big4Auditor	-0.002	-0.002
	(0.005)	(0.005)
Constant	0.080*	0.084*
	(0.045)	(0.045)
Obs.	20,171	20,171
R-squared	0.222	0.222
Firm FE	YES	YES
Year FE	YES	YES

Note: This table reports the results examining whether the effect of corporate governance reform on CSR performance varies with the stringency of the legal environment in a country. The country-level stringency of legal environment is proxied by country-level (1) investor protection index, measuring the strength of investor protection and obtained from "Doing Business Indicators" by the International Finance Corporation and World Bank and (2) regulatory quality index, which captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. To facilitate interpretation, in the empirical model, *HI_InvPro* is an indicator variable that equals one (zero) if the investor protection index is above (below) the sample median. Similarly, *HI_RegQual* is an indicator variable that equals one (zero) if the regulatory quality index is above (below) the sample median. All other variables are defined in Appendix B. Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 12 Ownership, Corporate Governance Reform, and CSR Performance

	(1)	(2)
Ownership	Institutional Ownership	Insider Ownership
Dependent Variable	*CSR_Perf*	*CSR_Perf*
Post	0.016***	0.024***
	(0.006)	(0.005)
Post × HI_Institution	**0.010*** **	
	(0.003)	
Post × HI_Insider		**-0.021*** **
		(0.006)
Size	0.022***	0.022***
	(0.003)	(0.003)
Age	0.031***	0.030***
	(0.010)	(0.010)
RD	0.106	0.106
	(0.088)	(0.088)
Leverage	-0.032***	-0.034***
	(0.012)	(0.012)
Accrual	-0.004	-0.005
	(0.010)	(0.010)
Competition	-0.012	-0.017
	(0.019)	(0.019)
SalesGrowth	-0.009***	-0.009***
	(0.003)	(0.003)
Capital	-0.006	-0.008
	(0.038)	(0.038)
MB	0.001**	0.001**
	(0.001)	(0.001)
Institution		-0.012*
		(0.007)
Nmarket	-0.010**	-0.010**
	(0.004)	(0.004)
Analyst	0.001***	0.001***
	(0.000)	(0.000)
Big4Auditor	-0.002	-0.002
	(0.005)	(0.005)
Constant	0.073	0.082*
	(0.045)	(0.045)
Obs.	20,293	20,293
R-squared	0.223	0.223
Firm FE	YES	YES
Year FE	YES	YES

Note: This table reports the results examining whether the effect of corporate governance reforms on CSR performance varies with institutional ownership or insider ownership. *HI_Institution* is an indicator variable equal to one (zero) if the proportion of shares (end-of-year) held by all types of institutional investors of a firm, obtained from Capital IQ database, is greater (lower) than the median institutional ownership of all firms in the same industry. Similarly, *HI_Insider* is an indicator variable equal to one (zero) if the proportion of shares (end-of-year) held by the CEO, obtained from Capital IQ database, is greater (lower) than the median CEO ownership of all firms in the same industry. All other variables are defined in Appendix B. Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 13 Corporate Governance Reform, CSR Performance, and Future Financial Performance

	(1)	(2)
Dependent Variable	*Tobin's Q (t+1)*	*Tobin's Q (t+1)*
Post		0.134***
		(0.042)
Reform		0.370***
		(0.070)
Reform × Post		-0.234***
		(0.047)
CSR_Perf	**0.104*** **	**0.164*** **
	(0.026)	**(0.063)**
CSR_Perf × Post		**-0.047**
		(0.059)
CSR_Perf × Reform		**-0.227*** **
		(0.077)
CSR_Perf × Reform × Post		**0.255*** **
		(0.074)
Size	-0.223***	-0.223***
	(0.008)	(0.008)
Age	-0.018	-0.017
	(0.012)	(0.012)
RD	0.519**	0.495**
	(0.232)	(0.232)
Leverage	-0.598***	-0.592***
	(0.039)	(0.039)
Accrual	0.148***	0.153***
	(0.038)	(0.038)
Competition	-0.265***	-0.268***
	(0.053)	(0.053)
SalesGrowth	0.083***	0.086***
	(0.013)	(0.013)
Capital	0.191	0.183
	(0.131)	(0.131)
MB	0.089***	0.089***
	(0.002)	(0.002)
Institution	0.162***	0.147***
	(0.023)	(0.023)
Nmarket	0.060***	0.054***
	(0.013)	(0.013)
Analyst	0.004***	0.004***
	(0.001)	(0.001)
Big4Auditor	0.042***	0.039**
	(0.015)	(0.015)
Constant	3.353***	3.103***
	(0.081)	(0.093)
Obs.	16,779	16,779
Country FE	YES	YES
Industry FE	YES	YES
Year FE	YES	YES

Note: This table reports the results of the moderating effect of corporate governance reforms on the relation between CSR performance and future financial performance, measured by Tobin's Q of year *t+1*. *CSR_Perf* is measured as the average of the environmental performance and social performance scores in ASSET4. *Post* is an indicator variable that equals 1 starting the year in which corporate governance reform became effective in a country and 0 otherwise. *Reform* is an indicator variable that equals 1 if the firm is in a country that implemented corporate governance reform during our sample period and 0 otherwise. All variables are defined in Appendix B. Standard errors are reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.